

In the Claims:

Please cancel original claims 12-17.

Please amend the remaining claims as follows:

1. (Amended) A method for evaluating parameters of a drum design for use in a helical scan tape device comprising the steps of:

(a) receiving said parameters wherein said parameters include position of a first read head on said drum, said first read head sensing data recorded along a first azimuth;

(b) simulating the reading of one track of a plurality of tracks by calculating the geometric area said first read head would cover as it scans over said track of predetermined dimensions;

(c) determining the amount of overlap of said geometric area as a percentage of the area defined by said predetermined dimensions of said track;

(d) determining that the simulated read is successful when said percentage is greater than a predetermined coverage threshold value;

(e) repeating steps (b) through (d) for each of said plurality of tracks; and

(f) determining that said parameters are effective for a drum design when a number of said plurality of tracks for which the simulated read was determined to be successful is greater than a predetermined error rate threshold value.

2. (Amended) The method of claim 1 wherein said parameters includes position of a second read head on said drum, and

wherein the step of simulating further comprises the step of simulating the reading of said track by calculating the combined geometric area that would be covered by said first read head and by said second read head as they scan over said track, said first read head sensing data recorded along a first

azimuth; and

wherein the step of determining the amount of overlap comprises the step of determining the amount of overlap of said combined geometric area as a percentage of area defined by said predetermined dimensions of said track.

8. (Amended) A method for evaluating parameters of a drum design for use in a helical scan tape device comprising the steps of:

(a) receiving said parameters wherein said parameters include a position of a first read head on said drum and a position of a second read head on said drum, said first read head sensing data recorded along a first azimuth and said second read head sensing data recorded along said first azimuth;

(b) simulating the reading of one track of a plurality of tracks by calculating a first geometric area said first read head would cover as it scans over said track of predetermined dimensions and by calculating a second geometric area said second read head would cover as it scans over said track;

(c) determining the amount of overlap of said first geometric area as a first percentage of the area defined by said predetermined dimensions of said track and the amount of overlap of said second geometric area as a second percentage of the area defined by said predetermined dimensions of said track;

(d) determining that the simulated read is successful when either said first percentage is greater than a predetermined coverage threshold value or said second percentage is greater than said predetermined coverage threshold value;

(e) repeating steps (b) through (d) for each of said plurality of tracks; and

(f) determining that said parameters are effective for a drum design when a number of said plurality of tracks for which the simulated read was determined to be successful is greater than a predetermined error rate threshold value.

Please add the following new claims 12 -18:

12. A drum evaluation simulator which evaluates parameters of a drum design for use in a helical scan tape device comprising:

a parameter receiving element for receiving said parameters wherein said parameters include position of a first read head on said drum;

a read simulation element for simulating the reading of one track of a plurality of tracks by calculating the geometric area said first read head would cover as it scans over said track of predetermined dimensions; and

a coverage determination element for determining the amount of overlap of said geometric area as a percentage of the area defined by said predetermined dimensions of said track.

13. The drum evaluation simulator of claim 1 wherein said parameters includes position of a second read head on said drum, and

wherein the read simulation element simulates the reading of said track by calculating the combined geometric area that would be covered by said first read head and by said second read head as they scan over said track, and

wherein the coverage determination element determines the amount of overlap of said combined geometric area as a percentage of area defined by said predetermined dimensions of said track.

14. The drum evaluation simulator of claim 1 wherein said parameters includes positions of a plurality of read heads on said drum, and

wherein the read simulation element simulates the reading of said track by calculating the combined geometric area that would be covered by said plurality of read heads as they scan over said track, and

wherein the coverage determination element determines the amount of overlap of said combined geometric area as a percentage of area defined by said predetermined dimensions of said track.

15. The drum evaluation simulator of claim 1 wherein said parameters include a nominal tape speed and wherein:

the read simulation element varies said tape speed from said nominal tape speed parameter value to generate an alternate tape speed value; and

the coverage determination element determines the amount of overlap of said geometric area as a percentage of the area defined by said predetermined dimensions of said track for said alternate tape speed value.

16. The drum evaluation simulator of claim 4 wherein said read simulation element generates said alternate tape speed values as values less than or equal to the nominal speed of said tape device.

17. The drum evaluation simulator of claim 1 wherein said parameters include a nominal gap width and wherein:

the read simulation element varies said gap width from said nominal gap width parameter value to generate an alternate gap width value; and

the coverage determination element determines the amount of overlap of said geometric area as a percentage of the area defined by said predetermined dimensions of said track for said alternate gap width value.

18. The drum evaluation simulator of claim 1 wherein said parameters include a nominal head offset spacing and wherein:

the read simulation element varies said head offset spacing from said nominal head offset spacing parameter value to generate an alternate head offset spacing value; and

the coverage determination element determines the amount of overlap of said geometric area as a percentage of the area defined by said predetermined dimensions of said track for said alternate head offset spacing value.